Claims

What is claimed is:

1.   A method for optimizing power consumption in a communication system comprising a network interface and a host computer, the method comprising:

determining, by the network interface, at least one power mode of the host computer from a plurality of possible power modes; and

selecting, by the network interface, at least one network interface power management state from a plurality of possible power management states based on the at least one power mode determined.

2.   The method of Claim 1 wherein said plurality of possible power modes comprise at least one of a first, second and third power modes.

3.   The method of Claim 1 wherein said at least one power mode comprises at least a fourth power mode.

4.   The method of Claim 1 wherein said plurality of possible power management states comprises at lease one of a first, second and third power management states.

5.   The method of Claim 1 wherein said at least one power management state comprises at least a fourth power management state.

6.   The method of Claim 1 wherein determining at least one power mode comprises determining at least one power management state from a plurality of power management states.

7.   The method of Claim 1 wherein the determining at least one power mode comprises detecting at least one of an absence of A/C power, an amount of communication traffic, a link and a power state.

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8. The method of Claim 1 comprising operating the communication device at a frequency supporting high bandwith transmission.

9. The method of Claim 8 comprising operating at least a portion of the communication device at 62.5 mHz.

10. The method of Claim 1, comprising reducing a throughput of the communication device.

11. The method of Claim 10 comprising reducing the throughput of the communication device from about 1000 Base-T to about 10 Base-T.

12. The method of Claim 1 comprising switching to a slow clock during at least one power management state.

13. The method of Claim 12 comprising switching to a 6.25 mHz clock.

14. A method for optimizing power consumption in a communication system used in a Gigabit Ethernet environment comprising:

determining at least one power mode of a host from a plurality of possible host power modes; and

selecting at least one network interface power management state from a plurality of possible network interface power management states based, at least in part, on said determined at least one power mode.

15. The method of Claim 14 wherein said plurality of possible power modes comprise at least one of a first, second and third power modes.

16. The method of Claim 14 wherein said plurality of possible power management states comprises at lease one of a first, second third and fourth power management states.

17. The method of Claim 14 comprising operating the communication device at a frequency supporting high bandwith transmission.

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18. The method of Claim 17 comprising operating at least a portion of the communication's device at 62.5 mHz.

19. The method of Claim 14 comprising switching to a slow clock during at least one power management state.

20. The method of Claim 19 comprising switching to a 6.25 mHz clock.

21. The method of Claim 14 comprising reducing a throughput of the communication device.

22. The method of Claim 21, comprising reducing the throughput of the communication device from about 1000 Base T to about no throughput.

23. A method for optimizing power consumption in a communication system used in a Gigabit Ethernet environment comprising:

determining at least one of a first, second and third power modes; and

selecting at least one network interface power management state, based at least in part on said determined power mode.

24. A method for optimizing power consumption in a communication system used in a Gigabit Ethernet environment comprising:

determining a host power mode; and

operating a first, second third and fourth power management states based on said determined host power mode.

25.   A method for optimizing power consumption in a communication system comprising:

detecting at least one of an amount of traffic, a link, an absence of AC power and a power state of the communication system; and

selecting at least one power management state from a plurality of power management states based at least in part in said detection.

26.   The method of Claim 25 wherein said power is scaled in relationship to said detected amount of traffic.

27.   A system for optimizing power consumption in a communication system used in a Gigabit Ethernet environment comprising:

a PHY adapted to detect at least one host power mode from a plurality of possible host power modes, and select, based the host power mode detected, at least one power management state from a plurality of power management states for operation of the system; and

a MAC interfacing with at least said PHY.

28.   The system of Claim 27, wherein said PHY comprises a single chip multi-sublayer PHY.